

WHAT IS CLAIMED IS:

1. A disk drive comprising:

a disk having a recording surface on which a plurality of concentric tracks are arranged at a fixed pitch;

a head arranged in association with the recording surface of the disk and used to read and write data from and to the disk;

means for calculating a first offset value on the basis of the position of a first target track specified by a command from a host, the first offset value reflecting a track pitch which enables adverse effects of crosstalk to be suppressed, the first offset value indicating an offset of a target position at which the head is to be actually positioned from a predetermined position on the first target track in a radial direction of the disk;

means for determining a second target track, to which the target position belongs, and a second offset value on the basis of the position of the first target track and the first offset value calculated by the calculating means, the second offset value indicating an offset of the target position from a predetermined position on the second target track in the radial direction of the disk; and

means for executing control to position the head at the target position on the second target track on

the basis of the second target track position and second offset value each determined by the determining means.

2. The disk drive according to claim 1, wherein:
5 the head is a composite head;

the recording surface of the disk is divided into a plurality of concentric areas in accordance with an azimuth angle of the head; and

the calculating means calculates the first offset
10 values in accordance with one of the plurality of areas on the recording surface of the disk and the relative position of the first target track in the one area, the first target track belonging to the one area.

15 3. The disk drive according to claim 2, further comprising means for identifying the one area; and wherein the calculating means calculates the first offset value in accordance with the area identified by the identifying means and the relative position of the
20 first target track in the identified area.

4. The disk drive according to claim 3, further comprising:

a nonvolatile memory which pre-stores a third and fourth offset values unique to each of the areas on
25 the recording surface of the disk, the third offset value indicating a pitch difference between a first track pitch representative of the pitch of the tracks

on the recording surface and a second track pitch
the enables the adverse effects of crosstalk to be
suppressed, the fourth offset value indicating, if
a predetermined track at a predetermined relative
5 position within the corresponding area is the first
target track, an offset of the target position at
which the head is to be actually positioned from the
predetermined position on the first target track in
the radial direction of the disk; and

10 means for reading the third and fourth offset
values corresponding to the area identified by the
identifying means, from the nonvolatile memory; and

wherein the calculating means calculates the
first offset value on the basis of the third and
15 fourth offset values read by the reading means, the
first track pitch, and an offset of the first target
track, the offset of the first target track being
offset from the relative position of the predetermined
track in the area to which the first target track
20 belongs.

5. The disk drive according to claim 3, further
comprising:

a nonvolatile memory which pre-stores a third
offset value unique to each of the areas on the
25 recording surface of the disk, the third offset value
indicating a pitch difference between a first track
pitch representative of the pitch of the tracks on the

recording surface and a second track pitch the enables the adverse effects of crosstalk to be suppressed; and

means for reading, from the nonvolatile memory, the third offset value corresponding to each of areas, the areas ranging from an area to which a leading track on the recording surface of the disk belongs, to the area identified by the identifying means; and

wherein the calculating means calculates the first offset value on the basis of the third offset value read by the reading means, the first track pitch, and an offset of the first target track, the offset of the first target track being offset from the relative position of the predetermined track in the area to which the first target track belongs.

6. The disk drive according to claim 1, further comprising another head paired with the head; and wherein:

the disk has another recording surface constituting a surface opposite to the recording surface relative to the disk and corresponding to the another head; and

the calculating means calculates the first offset value on the basis of the recording surface of the disk, to which the first target track belongs, and the relative position of the first target track on the recording surface.

7. The disk drive according to claim 6, further

comprising means for identifying the recording surface of the disk to which the first target track belongs; and wherein the calculating means calculates the first offset value in accordance with the recording surface identified by the identifying means and the relative position of the first target track on the recording surface.

8. The disk drive according to claim 7, further comprising:

a nonvolatile memory which pre-stores a third and fourth offset values unique to the recording surface of the disk, the third offset value indicating a pitch difference between a first track pitch representative of the pitch of the tracks on the recording surface and a second track pitch the enables the adverse effects of crosstalk to be suppressed, the fourth offset value indicating, if a predetermined track at a predetermined relative position on the recording surface is the first target track, an offset of the target position at which the head is to be actually positioned from the predetermined position on the first target track in the radial direction of the disk; and

means for reading the third and fourth offset values corresponding to the area identified by the identifying means, from the nonvolatile memory; and wherein the calculating means calculates the

first offset value on the basis of the third and fourth offset values read by the reading means, the first track pitch, and an offset of the first target track from the relative position of the predetermined track on the recording surface to which the first target track belongs.

9. The disk drive according to claim 7, further comprising:

a nonvolatile memory which pre-stores a third offset value unique to each of the recording surfaces of the disk, the third offset value indicating a pitch difference between a first track pitch representative of the pitch of the tracks on each of the recording surfaces and a second track pitch the enables the adverse effects of crosstalk to be suppressed; and

means for reading, from the nonvolatile memory, the third offset value corresponding to each of the recording surfaces of the disk from a leading recording surface to the recording surface identified by the identifying means; and

wherein the calculating means calculates the first offset value on the basis of the third offset value corresponding to each of the recording surfaces of the disk from a leading recording surface to the recording surface identified by the identifying means, the first track pitch, and an offset of the first target track from the relative position of the

predetermined track on the recording surface to which the first target track belongs.

10. A disk drive comprising:

5 a disk having a recording surface on which a plurality of concentric tracks are arranged at a fixed pitch;

a head arranged in association with the recording surface of the disk and used to read and write data from and to the disk;

10 means for calculating a first offset value on the basis of a pitch difference corresponding to the head width of the head and the position of a first target track specified by a command from a host, the pitch difference being a difference between a first track pitch representative of the pitch of the tracks and
15 a second track pitch which enables adverse effects of crosstalk to be suppressed, the first offset value indicating an offset of a target position at which the head is to be actually positioned from a predetermined track on the first target track in a radial direction
20 of the disk;

means for determining a second target track, to which the target position belongs, and a second offset value on the basis of the position of the first target track and the first offset value calculated by the
25 calculating means, the second offset value indicating an offset of the target position from a predetermined

position on the second target track in the radial direction of the disk; and

means for executing control to position the head at the target position on the second target track on the basis of the second target track position and second offset value each determined by the determining means.

11. The disk drive according to claim 10, further comprising a nonvolatile memory which pre-stores a third offset value indicating the pitch difference corresponding to the head width of the head and wherein the calculating means calculates the first offset value on the basis of the third offset value stored in the nonvolatile memory and the position of the first target track.

12. A disk drive comprising:

a disk having a recording surface on which a plurality of concentric servo tracks are arranged at a first track pitch, servo information including positional information being written discretely at equal intervals in a circumferential direction of the disk for each of the servo tracks;

a head arranged in association with the recording surface of the disk and used to read and write data from and to the disk; and

means for controlling a data write to the disk executed by the head, the controlling means

controlling the data write so that the track pitch of data tracks formed on the recording surface of the disk as a result of data writes is a second track pitch which enables the adverse effects of crosstalk to be suppressed.

13. The disk drive according to claim 12, wherein:

the head is a composite head;

the recording surface of the disk is divided into a plurality of concentric areas in accordance with an azimuth angle of the head; and

the second track pitch is set for each of the areas on the recording surface of the disk to have a value reflecting a data write width of the head associated with the azimuth angle of the head, the second track pitch being equal to or larger than the first track pitch.

14. A method of positioning a head at a target position on a disk in a disk drive, the disk having a recording surface on which a plurality of concentric tracks are arranged at a fixed pitch, the head being used to read and write data from and to the disk, the method comprising:

calculating a first offset value on the basis of the position of a first target track specified by a command from a host, the first offset value reflecting a track pitch which enables adverse effects of

crosstalk to be suppressed, the first offset value indicating an offset of a target position at which the head is to be actually positioned from a predetermined position on the first target track in a radial direction of the disk;

determining a second target track, to which the target position belongs, and a second offset value on the basis of the position of the first target track and the calculated first offset, the second offset value indicating an offset of the target position from a predetermined position on the second target track in the radial direction of the disk; and

positioning the head at the target position on the determined second target track on the basis of the determined second target track position and second offset value.

15. The method according to claim 14, wherein:
the head is a composite head;

the recording surface of the disk is divided into a plurality of concentric areas in accordance with an azimuth angle of the head; and

the first offset values is calculated in accordance with one of the plurality of areas on the recording surface of the disk and the relative position of the first target track in the area, the first target track belonging to the one of the plurality of areas.

16. The method according to claim 15, further comprising reading third and fourth offset values corresponding to an area on the recording surface of the disk to which the first target track belongs, from
5 a nonvolatile memory which pre-stores the third and fourth offset values unique to each of the areas on the recording surface of the disk, the third offset value indicating a pitch difference between a first track pitch representative of the pitch of the tracks
10 on the recording surface and a second track pitch the enables the adverse effects of crosstalk to be suppressed, the fourth offset value indicating, if a predetermined track at a predetermined relative position within the corresponding area is the first
15 target track, an offset of the target position at which the head is to be actually positioned from the predetermined position on the first target track in the radial direction of the disk; and

wherein the first offset value is calculated on
20 the basis of the third and fourth offset values read from the nonvolatile memory, the first track pitch, and an offset of the first target track, the offset of the first target track being offset from the relative position of the predetermined track in the area to
25 which the first target track belongs.

17. The method according to claim 16, further comprising:

measuring the third and fourth offset values for each of the areas during a manufacturing stage for the disk drive; and

storing the measured third and fourth offset
5 values for each of the areas in the nonvolatile memory.

18. The method according to claim 17, wherein the measuring includes:

selecting a track from each of the areas;
10 allowing the head to write data at a position offset from the selected track in the radial direction of the disk by an amount " $\text{the first track pitch} + (h-1) * \Delta O$ " (where h denotes a variable with an initial value of 1 and ΔO denotes a predetermined fifth offset
15 value);

determining whether a data write executed by the head causes the selected track to be adversely affected by crosstalk;

repeatedly writing the data while incrementing
20 the variable h by one until it is determined that the data write executed by the head will not cause the selected track to be adversely affected by crosstalk;

when it is determined that the data write executed by the head will not cause the selected track
25 to be adversely affected by crosstalk, determining twice the value " $(h-1) * \Delta O$ " to be the third offset value unique to the corresponding area; and

determining the fourth offset value unique to the corresponding area, on the basis of the determined third offset value.

19. The method according to claim 15, further
5 comprising reading a third offset value corresponding to each of areas from an area to which a leading track on the recording surface of the disk belongs to the area to which the first target track belongs, from a nonvolatile memory which pre-stores a third offset
10 value unique to each of the areas on the recording surface of the disk, the third offset value indicating a pitch difference between a first track pitch representative of the pitch of the tracks on the recording surface and a second track pitch the enables
15 the adverse effects of crosstalk to be suppressed; and
wherein the first offset value is calculated on the basis of the third offset value read from the nonvolatile memory, the first track pitch, and an
20 offset of the first target track, the offset being offset from the relative position of the predetermined track in the area to which the first target track belongs.

20. The method according to claim 19, further comprising:
25 measuring the third offset value for each of the areas during a manufacturing stage for the disk drive; and

storing the measured third offset value for each of the areas in the nonvolatile memory.

21. The method according to claim 20, wherein the measuring includes:

5 selecting a track from each of the areas;
 allowing the head to write data at a position offset from the selected track in the radial direction of the disk by an amount "the first track pitch+(h-1)* ΔO " (where \underline{h} denotes a variable with
10 an initial value of 1 and ΔO denotes a predetermined fifth offset value);

 determining whether a data write executed by the head causes the selected track to be adversely affected by crosstalk;

15 repeatedly writing the data while incrementing the variable \underline{h} by one until it is determined that the data write executed by the head will not cause the selected track to be adversely affected by crosstalk;
 and

20 determining twice the value " $(h-1)*\Delta O$ " to be the third offset value unique to the corresponding area, when it is determined that the data write executed by the head will not cause the selected track to be adversely affected by crosstalk.